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September 20, 2013

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street SW
Washington, DC 20554

Re: *Globalstar, Inc. Petition for Rulemaking to Reform the Commission's Regulatory Framework for Terrestrial Use of the Big LEO MSS Band – RM-11685*
Ex Parte Notice

Dear Ms. Dortch:

On September 18, 2013, L. Barbee Ponder IV, General Counsel & Vice President, Regulatory Affairs, for Globalstar, Inc. (“Globalstar”), Steve Berman of Lawler, Metzger, Keeney & Logan, LLC, and I had separate meetings with Louis Peraertz, Legal Advisor to Chairwoman Mignon Clyburn; Courtney Reinhard, Legal Advisor to Commissioner Ajit Pai; and David Goldman, Senior Legal Advisor to Commissioner Jessica Rosenworcel, regarding proposed reforms of the Commission’s terrestrial-use rules and policies in the Big LEO band.¹

On September 5, 2013, Globalstar’s requested Notice of Proposed Rulemaking on these issues was placed on circulation for consideration by the full Commission. At our meetings, we urged that the Commission adopt the Notice of Proposed Rulemaking and move forward expeditiously with this rulemaking. As demonstrated by the record in the above-captioned proceeding, Globalstar’s proposed Big LEO reforms will bring consumers the benefits of increased investment and innovation and more intensive use of its spectrum for a variety of terrestrial broadband applications, including Globalstar’s proposed terrestrial low power service (“TLPS”). The deployment of TLPS will quickly add 22 megahertz to the nation’s wireless broadband spectrum inventory, easing the congestion that is diminishing the quality of Wi-Fi service at high-traffic 802.11 hotspots and other locations.

¹ See Petition for Rulemaking of Globalstar, Inc., RM-11685 (Nov. 13, 2012).

Ms. Marlene Dortch
September 20, 2013
Page 2

We provided the attached slide presentation on these matters. Pursuant to section 1.1206(b)(2) of the Commission's rules, 47 C.F.R. § 1.1206(b)(2), this *ex parte* notification and the attached presentation are being filed electronically for inclusion in the public record of the above-referenced proceeding.

Respectfully submitted,

/s/ Regina M. Keeney
Regina M. Keeney

cc: Louis Peraertz
Courtney Reinhard
David Goldman



Globalstar[®]

SEPTEMBER 2013

SUMMARY

1. GLOBALSTAR NETWORK / PRODUCTS UPDATE:

- Fully launched Second-Gen Constellation costing over \$1 Billion, utilizing approximately 25 MHz of globally harmonized spectrum;
- Providing critical Mobile Satellite Services to over 550,000 government, public safety, enterprise and retail customers;
- Over 2400 rescues initiated using Globalstar's SPOT products since 2007– averaging one per day;

2. GLOBALSTAR'S PETITION FOR RULEMAKING / NEAR-TERM PLAN:

- Filed petition for rulemaking on November 13th, 2012 for terrestrial authority;
- Terrestrial Low Power Service (TLPS) will **immediately** increase Wi-Fi capacity by > 33% on existing devices, thereby diminishing the “Wi-Fi Traffic Jam”;
- Disruptive technology that affords new entrants the opportunity to build the Nation's first Post-Cellular Network;

3. GLOBALSTAR'S LONG-TERM PLAN:

- Utilize approximately 20 MHz of spectrum for Mobile Broadband LTE applications while continuing to grow its base of over 550,000 MSS customers;

Requests are consistent with the National Broadband Plan and the President's June 14th Memorandum;

Will provide a meaningful contribution to Education, Public Safety, and Health Care goals.



GLOBALSTAR NETWORK / PRODUCTS UPDATE

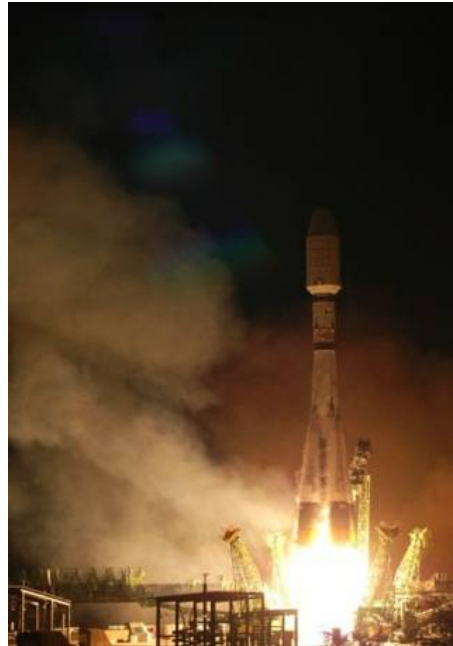
GLOBALSTAR'S SUCCESSFUL LAUNCH CAMPAIGN

Globalstar is the first MSS provider to successfully launch a second-generation constellation of LEO satellites, years ahead of its competition.

Launch 1 – Oct '10



Launch 2 – July '11



Launch 3 – Dec '11



Launch 4 – Feb '13



Launch Campaign Highlights

- Launch 4 was successful;
- Satellites accurately injected into targeted orbit of 920 Kilometers;
- Initial check out complete and all have delivered calls successfully;
- Final two satellites placed into service in June and August;



GLOBALSTAR'S TARGET MARKET



Source: *Adventure Tourism Market Report* by George Washington University, Adventure Travel Trade Association, Xola Consulting, Informa Telecoms & Media.

(1) CIA World Factbook, as of 2010.

(2) *Adventure Tourism Market Report* by George Washington University, Adventure Travel Trade Association, Xola Consulting. Statistic based on survey conducted with participants in Latin America, North America, and Europe.

(3) Based on current plan "Evolution III" at \$49.99 / month assuming 400 minutes per month of usage.

(4) Informa Telecoms & Media (as reported by www.telecoms.com).

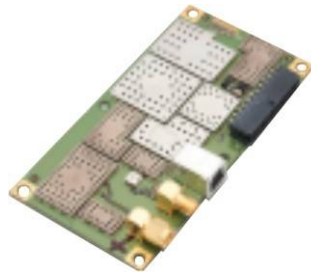
REPRESENTATIVE PRODUCTS: COMMERCIAL AND CONSUMER FOCUS

Commercial Focus

Mobile Satellite Phone



Data Modem



STX3



*New Asset Tracking device shown
in relative size next to a quarter*

Fixed Satellite Phone



Vertical Market, Enterprise, Public Safety commercial and government products distributed through a vast network of 2000 dealers/ Agents/ Resellers

Consumer Focus

Consumer Asset Tracker



SPOT Gen3



SPOT Connect
Integrated with Smartphone



SPOT Global Phone

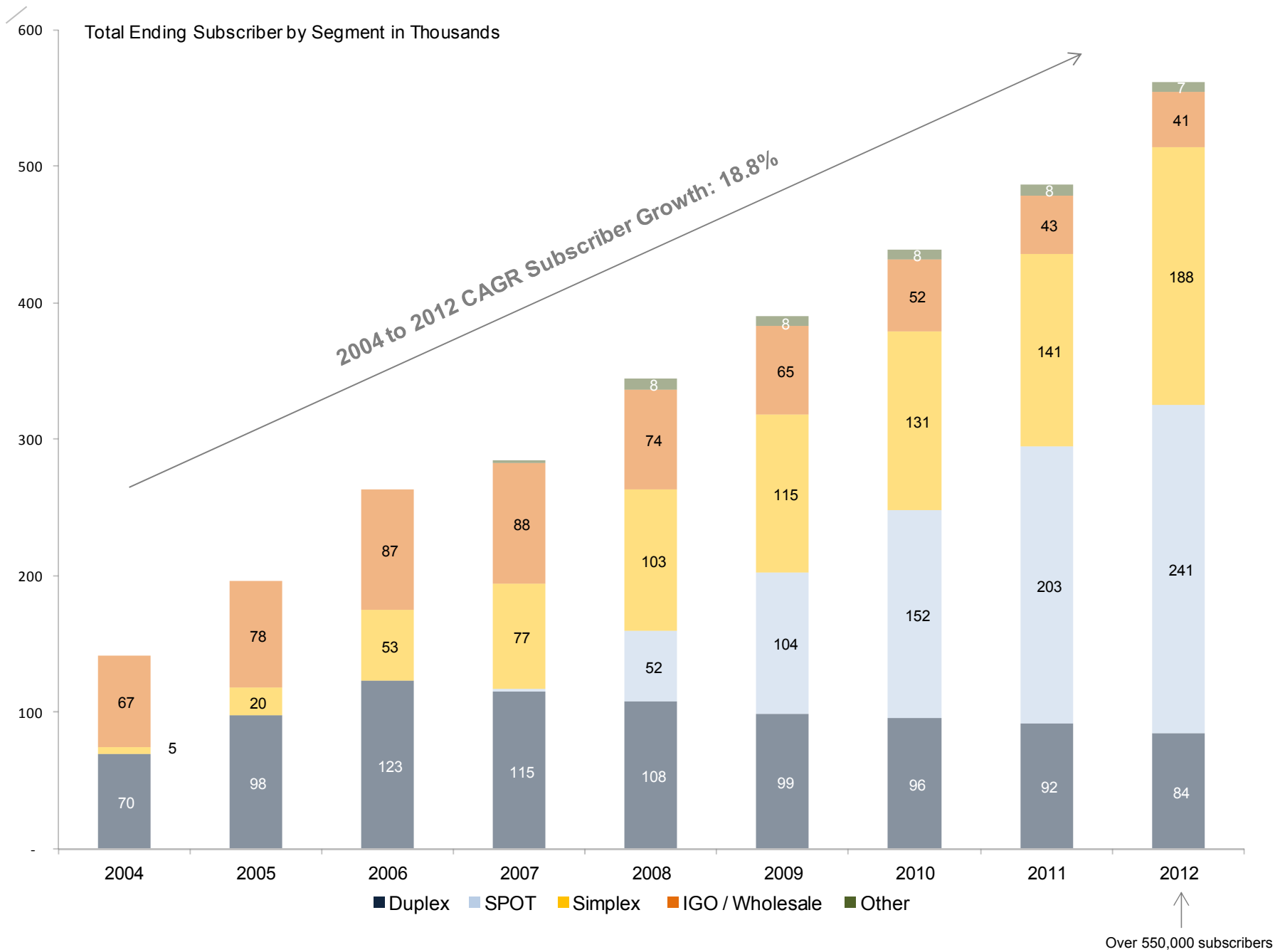


Consumer Mass Market Products distributed through over 10,000 points of retail distribution

Since 2007, Globalstar's SPOT customers have initiated over 2,400 rescues globally, averaging 2 people per rescue

On average, Globalstar's SPOT customers are initiating 1 rescue everyday somewhere around the world

HISTORICAL SUBSCRIBERS BY PRODUCT





THE PROBLEM — SPECTRUM EXHAUSTION

THE NEED FOR MORE SPECTRUM



President Obama

“The FCC is strongly encouraged ... to expedite the repurposing of spectrum and otherwise enable innovative and flexible commercial uses of spectrum, including broadband, to be deployed as rapidly as possible by ... identifying spectrum allocated for nonfederal uses that can be made available for licensed and unlicensed wireless broadband services and devices, and other innovative and flexible uses of spectrum, while fairly accommodating the rights and reasonable expectations of incumbent users;” The White House, Office of the Press Secretary, Memorandum for the Heads of Executive Departments and Agencies, Sec. 7(a) (June 14, 2013);



Chairwoman Mignon L. Clyburn

“[M]aintaining this lead will only happen if we address one of the biggest challenges to our nation---the demand for spectrum... The National Broadband Plan helped put the issue of spectrum squarely on the map, and the agency is doing a lot of creative things to make more spectrum available. Over the past four years, we have initiated and implemented significant spectrum policy innovations under Chairman Genachowski’s leadership and are moving full speed ahead during this transition period.” *(Prepared remarks of FCC Acting Chairwoman Mignon L. Clyburn, CTIA 2013 Las Vegas, Nevada, May 21, 2013.)*

“The sobering fact is that based on today’s projections and technologies, the demand for spectrum threatens to outpace supply, sooner rather than later. This issue is particularly acute in the United States, where networks are running at the highest utilization rate of anywhere in the world. “ *(Prepared Remarks of Commissioner Mignon Clyburn at the 2nd Annual Americas Spectrum Management Conference – October 23, 2012.)*

“WI-FI TRAFFIC JAM” — 2.4 GHZ UNLICENSED SPECTRUM EXHAUSTED

Chairwoman Clyburn:

“The Nation’s demand for unlicensed services has increased so dramatically that we need more spectrum to support these services. The 2.4 GHz band, while critical to the success of Wi-Fi and other unlicensed technologies, is increasingly congested particularly in major cities. Densely populated centers are the most expensive geographic areas to deploy licensed networks.” Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, Notice of Proposed Rulemaking, 28 FCC Rcd. 1769 (2013) (Statement of Commissioner Mignon Clyburn).



“[T]he remarkable growth of Wi-Fi consumer demand is beginning to overwhelm unlicensed spectrum designations– the 2.4 GHz band is already saturated in many locations.” Comments of the National Cable & Telecommunications Association, ET Docket No. 13-49, at 1 (May 28, 2013).



“Consumers are likely to experience reduced coverage and throughput,” and “Wi-Fi will become less useful, particularly for high bandwidth services like video.” WiFi Spectrum: Exhaust Looms, Rob Alderfer, CableLabs, at 12 (May 28, 2013).



“[C]apacity constraints [are] already being felt in the 2.4 GHz band.” Comments of Cisco Systems, Inc., ET Docket No. 13-49, at i (May 28, 2013).



2.4 GHz unlicensed spectrum “has become saturated during certain times of day in heavily trafficked areas such as city centers, apartment buildings, and public events. This congestion imposes a large cost on consumers because Wi-Fi is the most heavily used method of wireless broadband connectivity and the 2.4 GHz band is the core Wi-Fi band today.” Comments of Google, Inc. and Microsoft Corporation, ET Docket No. 13-49, at 3 (May 28, 2013).



“Given congestion and capacity constraints in existing unlicensed bands and the demand for fixed broadband services in rural areas where other broadband service is often not available, increasing the amount of unlicensed spectrum is perhaps the most important action the Commission can take.” Comments of the Wireless Internet Service Providers Association, ET Docket No. 13-49, at ii (May 28, 2013).

“WI-FI TRAFFIC JAM” WILL BECOME WORSE AND CONSUMER SATISFACTION WILL DETERIORATE



There will be close to 7 billion mobile subscribers in the world this year – the equivalent of almost one device for every person on the planet. June 2012.

Cisco is seeing a “perfect storm” in both Wi-Fi availability and customer acceptance that is resulting in a worldwide rise in the popularity of Wi-Fi. Almost half of all households in the world are predicted to have Wi-Fi by 2016, or 83 percent of all broadband households.

The amount of mobile data offloaded to Wi-Fi networks is projected to reach 21 exabytes (or 21 *billion* gigabytes) by 2017.

Almost all mobile devices have Wi-Fi as their primary wireless access technology.

Mobile data caps, the cost of data plans, and the variable quality of many third-generation (3G) networks are encouraging users to replace mobile data with Wi-Fi in many cases.

Entertainment has shifted to the palms of our hands--- almost half of all mobile users regularly consume all forms of video, music, books, and games on their devices.

These mobile trends have caused mobile data traffic to double globally in 2012 and an increase of another 78 percent is expected by 2014. Global mobile traffic will continue to explode, growing at a rate three times faster than that of fixed IP traffic over this same period.

Two-thirds of all mobile traffic will be video by 2015.



The 2.4 GHz Wi-Fi band will reach exhaustion by 2014, with a spectrum deficit of approximately 10 megahertz.

CURRENTLY CONSIDERING SOLUTIONS THAT WILL TAKE YEARS TO IMPLEMENT AND ARE POOR SUBSTITUTES

- In considering how best to solve the Traffic Jam, Globalstar believes that the Commission should take an “ALL-OF-THE-ABOVE” approach;
- But existing FCC proceedings meant to address the Wi-Fi Traffic Jam will take significant time to complete;
- Additional time will be necessary for technology companies and carriers to build devices capable of implementing any additional spectral flexibility provided through these regulatory proceedings;
- In the interim, the problem will become worse;
- Also, the physical and technical limitations that are inherent in the other bands under consideration --- 3.5, 5.0, and 60 GHz--- make them a poor second choice for the mobile broadband experience that consumers have come to enjoy and expect over the 2.4 GHz band.
- ***The recent CableLabs report highlights the problems that must be addressed in freeing up additional spectrum in bands other than 2.4 GHz.***
- “[T]he role that 5 GHz will play is as yet unclear due to divergent regulatory regimes, technology differences, and inherent physical characteristics.” p.16
- “FCC proceedings can take years to complete, and other 5 GHz spectrum users have raised a number of concerns with expanding WiFi use of the band.” p. 17
- “In our present context, the 2.4 GHz band involves better propagation than the 5 GHz band by a factor of 4.3X. That is, holding all else equal, WiFi signals at 2.4 GHz will travel 4.3 times farther than signals at 5 GHz.” p. 18
- “5 GHz may suit some, but not all, of their needs. Namely, if suitable rules are established 5 GHz may provide substantial capacity, but not coverage.” Id.



GLOBALSTAR'S PETITION — AN IMMEDIATE SOLUTION

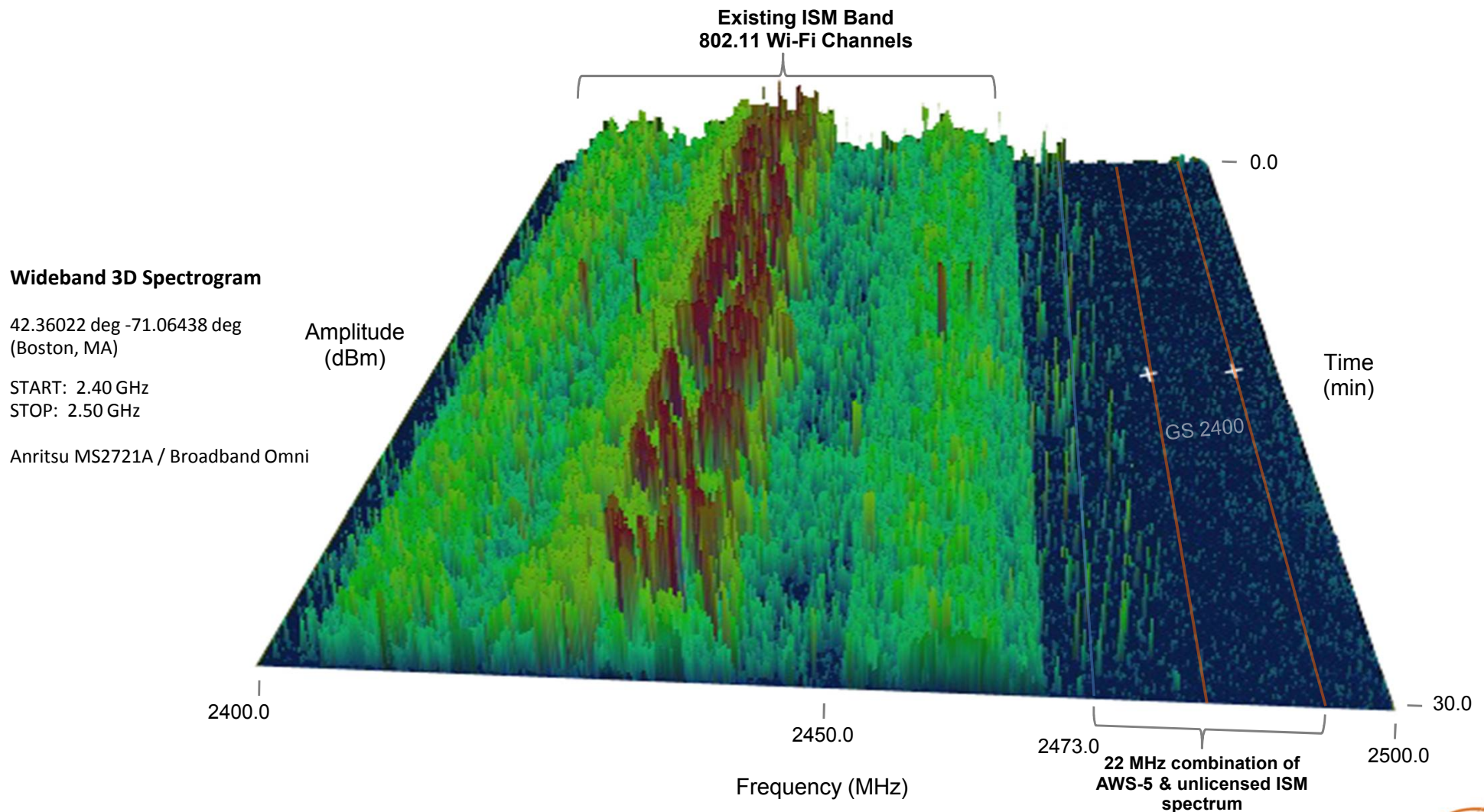
WI-FI SPECTRUM

Existing W-Fi Channels are
Saturated with **HIGH USAGE**
TLPS (CHANNEL 14) IS CLEAR!



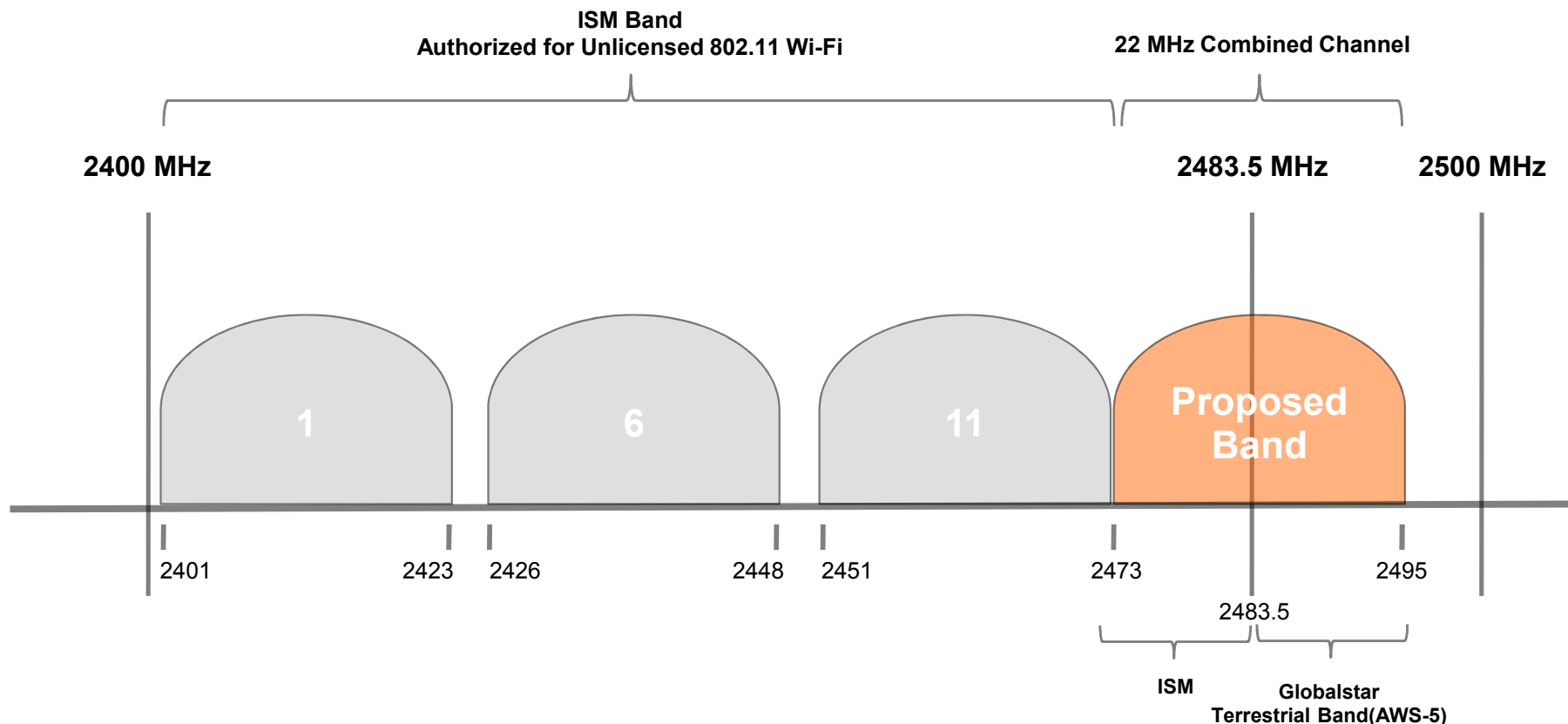
GLOBALSTAR'S MSS SPECTRUM IS A GREENFIELD OPPORTUNITY

- High channel crowding in existing public Wi-Fi channels (2401-2473), shown below in red and green, is now typical in many parts of the United States and acts as a fundamental limiting factor for both throughput and service quality.
- Globalstar's exclusively licensed spectrum at 2483.5-2495 MHz ("AWS-5") offers inherently beneficial spectral characteristics including a low noise floor, resulting in high data throughput. AWS-5 together with adjacent unlicensed spectrum represents an effective "clear channel", which offers considerable data speed and range advantages over interference limited public channels – lower interference characteristics means that transmission speeds can be maintained at a multiple of the range of the other adjacent channels.



TERRESTRIAL LOW POWER SERVICE (“TLPS”) & AWS-5

- The ISM 2.4 GHz WiFi band is the world’s best model for globally harmonized spectrum, however, the U.S. is primarily limited to 11 channels
- Due to the extreme prevalence of unlicensed Wi-Fi activity, the current use of Channels 1, 6 and 11 is highly compromised by the effects of co-channel interference
- Globalstar’s proposal will create an entirely new channel by combining its exclusively licensed spectrum with adjacent unlicensed ISM spectrum to create a 22 MHz wide new “clear channel”

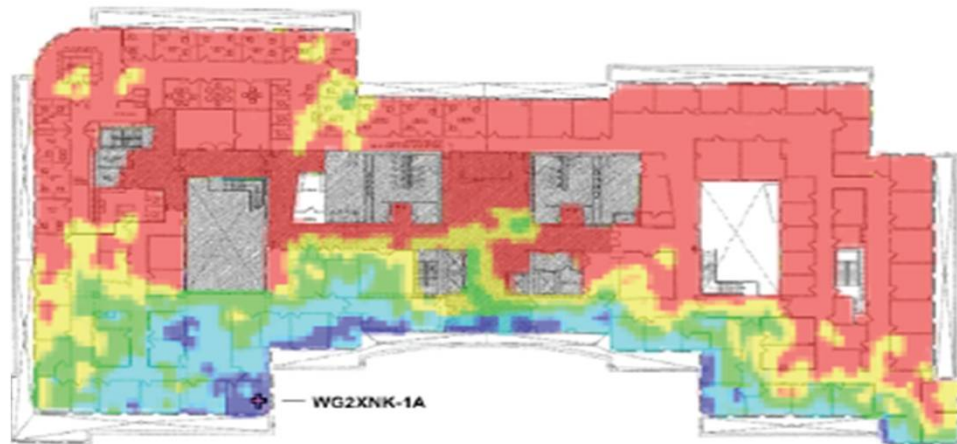


- AWS-5’s low interference characteristics is expected to result in high transmission speeds maintained over significantly longer ranges vs. Channels 1, 6 and 11 – moderate throughput rates may be maintained with considerably greater consistency in shadow zones and cell boundaries

INITIAL TEST RESULTS CONFIRM SUPERIORITY OF TLPS

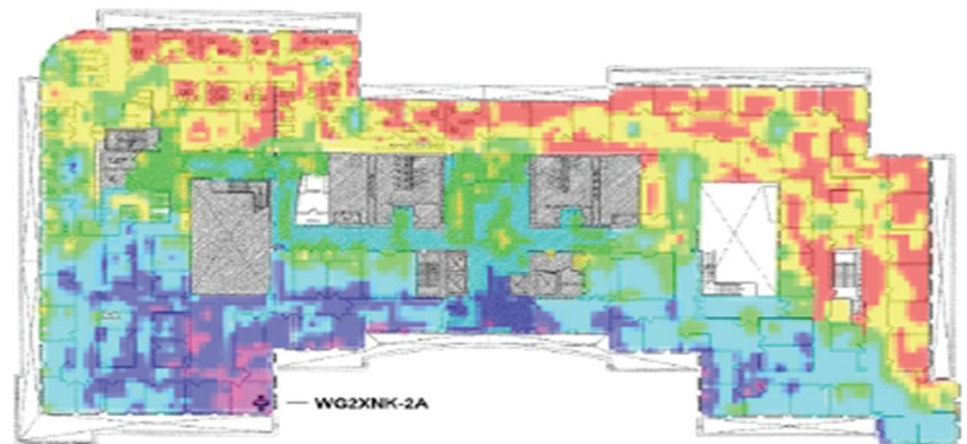
Globalstar and Jarvinian recently concluded initial tests which confirmed that TLPS surpasses public Wi-Fi by 5x the effective distance and 4x the effective capacity, with no impact on public Wi-Fi operations in adjacent channels.

PUBLIC WI-FI



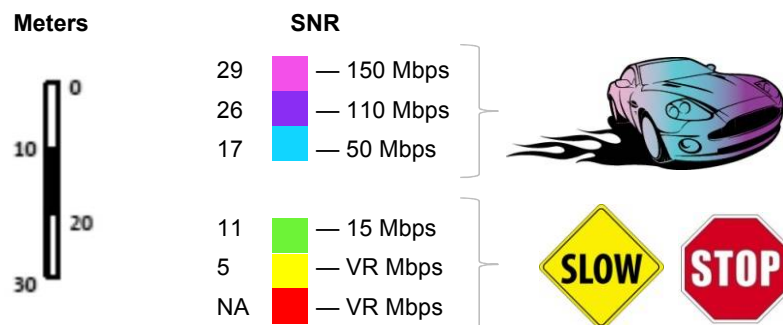
Generic MIMO AP
802.11 Channel 6

TLPS



Ruckus ZoneFlex 7372 AP
802.11 Channel 14 (TLPS)

COLOR LEGEND + SCALE



TEST LOCATION

Class A Office Building
Construction: GLSTMX

Two Canal Park, 5th Floor
Cambridge, MA 02141

42.36967 deg -71.05305 deg

TEST FREQUENCIES

802.11 Channel 6
2426.0 – 2448.0 MHz

802.11 Channel 14 (TLPS)
2473.0 – 2495.0 MHz

STA: WG2XNK

GLOBALSTAR'S TLPS WILL HELP MEET THE GOALS OF CONNECT-ED



"In a country where we expect free Wi-Fi with our coffee, why shouldn't we have it in our schools?"

--- President Obama

"[M]ost schools have about as much Internet bandwidth as your house. (Actually, probably less than many of your homes....)

"Let's talk megabits per second. It takes about 1.5 for one student to do what she needs to do with broadband. A classroom would require maybe 45. And for a whole tech-enabled school? About 120. We recommend a school should have about 100, with a clear path to get to 1,000 (which fiber optics provide).

"Today, the honest truth, the brutal truth, is that the typical school is nowhere near that.

"And our competitors are far ahead of us. In South Korea, for example, 100 percent of schools have high-speed Internet. Here, it's only about 20 percent. We are denying our teachers and students the tools they need to be successful. That is educationally unsound and it is morally unacceptable."

----- Secretary of Education Arne Duncan, 2013 NCTA Cable Show, Washington, D.C.

"It's not economically efficient to hardwire this entire country ... We have to figure out what's the most effective way to connect the community, using both licensed and unlicensed platforms."

--- Chairwoman Clyburn, recent comments at NCTA Cable Show

"In education, mobile computing has the potential to raise productivity and improve learning both inside and outside classrooms. In K-12 education, early experiments show promise for hybrid online/offline teaching models using tablets to increase lesson quality, improve student performance, and increase graduation rates."

--- McKinsey Report, *Disruptive Technologies*, pp. 35-36.

- Our nation's schools and libraries are not immune to the Wi-Fi Traffic Jam;
- Today's students do not want to be confined to a desk or attached to a cord in order to obtain broadband services in schools and libraries – they too are mobile.
- In most instances, the wireless delivery mechanism for students is public Wi-Fi.
- Globalstar's TLPS can provide the finest mobile broadband experience possible to our schools and libraries.
- Globalstar has committed to provide 20,000 free TLPS access points to special interest organizations, including schools and libraries.
- Additional TLPS access points could be provided through the E-Rate program.

GLOBALSTAR'S TLPS WILL PROVIDE CRITICAL CONNECTIVITY IN POST-DISASTER SITUATIONS



Terrestrial wireless networks are often rendered inoperable or quickly reach capacity during and after natural or man-made disasters.

Wi-Fi is becoming increasingly important in providing critical communications in post-disaster situations---“[T]he importance of robust, widely available unlicensed networks has been made abundantly clear over the past 12 months, when Wi-Fi networks played an important role in facilitating communications in the aftermath of Hurricane Sandy, Winter Storm Nemo, and the horrific attack at the Boston Marathon.” Testimony of Thomas F. Nagel, Senior VP Comcast Corporation, Before the U.S. Senate Committee on Commerce, Science, and Transportation Subcommittee on Communications, Technology, and the Internet, Hearing on “State of Wireless Communications,” June 4, 2013.

After Hurricane Sandy, terrestrial wireless service was unavailable in large portions of the affected areas and Wi-Fi was the alternative source for connectivity.

“Libraries Respond to Hurricane Sandy, Offering Refuge, WiFi, and Services to Needy Communities,”
<http://www.slj.com/2012/11/featured/libraries-respond-to-hurricane-sandy-offering-refuge-wifi-and-services-to-needy-communities/>

“Hunterdon libraries take up slack after Hurricane Sandy victims lose home internet and wi-fi,” http://www.nj.com/hunterdon-county-democrat/index.ssf/2012/11/hunterdon_libraries_take_up_sl.html

“Where to Find Internet, Phone Service In New York City After Hurricane Sandy,” http://www.huffingtonpost.com/2012/11/01/internet-service-new-york-hurricane-sandy_n_2057934.html

In the aftermath of the Boston Marathon bombing, terrestrial wireless networks were overloaded, and people resorted to Wi-Fi for connectivity.

Local restaurants offer free food and Wi-Fi after Boston terror attack, <http://now.msn.com/after-boston-marathon-terror-attack-restaurants-helping>

GLOBALSTAR'S TLPS WILL BENEFIT THE PROVISION OF HEALTH CARE



“Among the types of services that stand to benefit from mobile Internet technology, health care is one of the most promising. In just one application—management of chronic disease—this technology potentially could cut more than \$2 trillion a year in the projected cost of care by 2025. Today, treating chronic diseases accounts for about 60 percent of global health-care spending, and it could be more than \$15 trillion globally by 2025. Patients with conditions such as heart disease and diabetes could be monitored through ingestible or attached sensors, which can transmit readings and alert the patient, nurses, and physicians when vital signs indicate an impending problem, thus avoiding crises and the costs of emergency room visits or hospitalization.”

-----McKinsey Report, Disruptive technologies: Advances that will transform life, business and the global economy (May 2013), p. 35.

Iroquois Healthcare Association ---- “[W]e support Globalstar’s plans to substantially increase available mobile broadband capacity in the United States. As you know, hospitals have a critical need to transport an ever increasing amount of data in order to provide life-saving services to their patients.”

West Coast – Southern Medical Services, Inc.---- “As you know, EMS Systems have a critical need to transport an ever increasing amount of data in order to provide life-saving services to their patients. Globalstar has committed to provide free access points to their customers so they can utilize its Terrestrial Low Power Service Offering. We encourage the Commission to move forward with an NPRM on Globalstar’s petition in order to bring these benefits not only to our EMS system, but also to all EMS systems around the Nation.”

Florida Association of Community Health Centers---- “I am aware that Globalstar’s petition will dramatically increase mobile broadband capacity capabilities in the US which certainly reduces system wide stress during EM events. Further, Globalstar plans to provide mobile satellite service at no cost to FOHC’s in federally declared disaster areas. I can certainly remember times in 2004 & 2005 when most of Florida was a federally declared disaster area! Our membership and other medical providers will certainly benefit from this communications service. We encourage the Commission to move forward with an NPRM on Globalstar’s petition in order to bring these benefits to our members and ultimately, the patients who rely on our medical facilities.”

GLOBALSTAR'S NEAR-TERM PLAN WILL

- Dramatically expand the Nation's spectral capacity to relieve existing Wi-Fi congestion;
- Be managed over a carrier-grade network of access points designed and operated to minimize any impact on Globalstar's continued provision of MSS services;
- Not displace any existing or future unlicensed use in the ISM band, where Wi-Fi currently operates;
- Have no impact on any government or commercial GPS interests;
- Be implemented quickly by leveraging the existing investment in Wi-Fi devices and networks including over-the-air software and firmware updates to existing devices;
- Result in Globalstar providing 20,000 TLPS-capable access points to schools, libraries, hospitals, and/or other special interest organizations;
- Result in Globalstar providing its Mobile Satellite Services free of charge to its subscribers in federally declared disaster areas;
- Provide additional financial support for Globalstar's continued provision of critical Mobile Satellite Services.

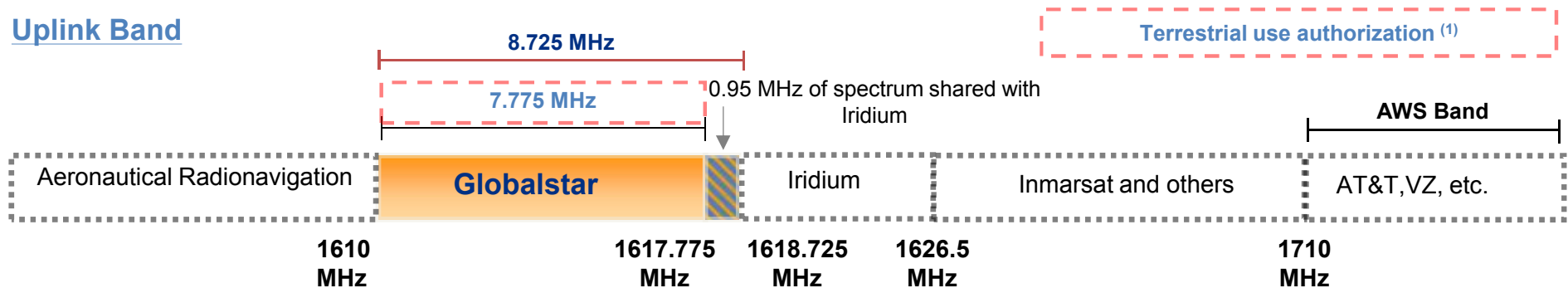


GLOBALSTAR'S LONG-TERM PLAN

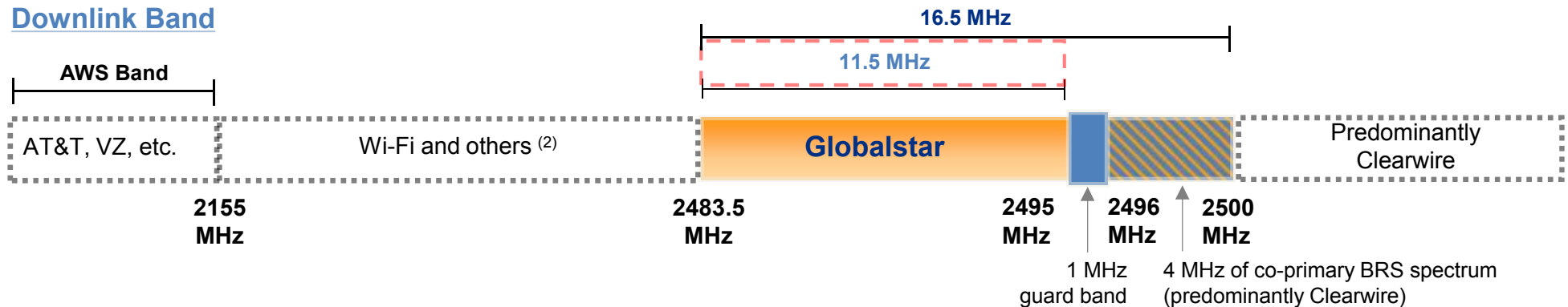
GLOBALSTAR'S LONG-TERM PLAN

- Globalstar requests that our additional MSS Uplink spectrum be included within the AWS-5 Terrestrial license for **Low Power Uplink** services only between 1610 and 1617.775 MHz
- Request a full rulemaking to address any potential interference issues from neighboring interests

Uplink Band



Downlink Band



(1) Subject to completion of the 2nd Generation constellation deployment and meeting certain gating requirements.

(2) There exists an effective guard band between 2473 and 2483.5 MHz in North America as Wi-Fi Channel 11 is the highest Wi-Fi channel in use.

GLOBALSTAR' S PETITION — CURRENT STATUS

- Filed a petition for rulemaking with the Commission on November 13th requesting terrestrial authority to offer a variety of mobile broadband services in its Big LEO spectrum allocation;
- Globalstar' s petition contained both a “near-term” proposal for a rulemaking to permit it to offer an innovative “Wi-Fi Like” Terrestrial Low Power Service (“TLPS”) within its downlink spectrum at 2483.5-2495 MHz, as well as a separate rulemaking for a “long-term” proposal to offer an FDD-LTE based mobile broadband service over both its downlink and uplink spectrum at 1610-1617.775 MHz.
- The Commission received comments from interested parties during January with the comment cycle closing on January 29th;
- Nine interested parties filed comments on Globalstar' s Petition;
- There are no outstanding requests for additional information from Globalstar.



THE FUTURE IS CLEAR!

- We are servicing over 550,000 customers world-wide with our unique product offerings.
- We require all of our existing spectrum to provide these critical Mobile Satellite Services.
- We should be permitted to utilize all of our spectrum as intensively as possible for MSS and Terrestrial uses for the benefit of our customers, our shareholders and the public.